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ABSTRACT

The implications of entrance requirements for success in a graduate teacher program were studied. Success was defined as maintaining a 3.0 grade point average with no more than 12 semester hours of "C" or lower. Entrance requirements were those of the University of Houston, Texas. The subjects were 139 1985 spring and summer graduates of the Master of Education program at a large public urban university and 106 current enrollees. Because there were few minority students, a disproportionate number was chosen for study. There were weak associations between entrance requirements and indicators of success, particularly among minorities. Although students reported that certain professors gave lower grades to minority students, overall, the pattern was not statistically significant. Although entrance requirements are not the primary indicators of grades among students admitted to this graduate program, minority students are less likely to meet entrance requirements, a discriminatory situation with implications for the education of minority students. Six tables and two flowcharts are appended. (SLD)

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IMPLICATIONS OF ENTRANCE REQUIREMENTS FOR SUCCESS IN GRADUATE TEACHER EDUCATION PROGRAMS

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IMPLICATIONS OF ENTRANCE REQUIREMENTS FOR SUCCESS IN GRADUATE TEACHER EDUCATION PROGRAMS

In 1985, Al Shanker, using data from a national study, projected a shortage of more than a million teachers in the coming decade. His projection was based on trends in the number of prospective teachers being prepared. In 1972, 317,000 teachers completed certification programs; by 1982, the number had dropped to 132,000, a 70 percent decline (Graybeal, 1982). In 1970, 19 percent of college freshmen wanted to teach but in 1982, less than 5 percent aspired to be teachers (Plisko, 1983, p. 218). While the current shortage appears to be primarily in certain fields, such as mathematics, science, bilingual education, and industrial arts, it appears to be increasing in these fields while extending across all fields. More and more classes consequently are being filled with substandard teachers. In 1984, six percent of Texas teachers were on emergency or temporary certificates; by 1989, the number is projected to increase to 19 percent (Nix, 1985).

Testing has become the response of many states to criticisms of quality in teachers. In 1984, Sandefur reported that 38 states had some form of competency testing of prospective teachers. An additional seven reported testing plans, and only five states had no plans to test prospective teachers. The speed with which the teacher testing movement covered the nation is impressive. Georgia was first, in 1975, followed by Louisiana in 1977. By 1980, the number of states had increased to 15, and by 1983, this had doubled to 30 states requiring some form of test for prospective teachers. Testing also is a popular notion. The 1979 Gallup Poll found that 85 percent of respondents agreed that teachers should be tested (Gallup, 1979).

Popkewitz (1985) points out that the current calls for reform are part of a public language that is a language of mystification. The discourse of reform helps to shape a consensus about the problem and a range of solutions considered possible within politically drawn social boundaries. American teacher educators promote a particular vision of society and professionalism, and legitimate the interest of particular groups as universal. The language of recent reform articles, for instance, flattens reality and obscures social values and ideological tensions that underlie teacher education.

The effects of these reforms on minority teachers have been devastating. The proportion of minority teachers in relation to the number of minority students is low. In 1980, 87 percent of public elementary and secondary school teachers were White, while only 73 percent of students were White. Ten percent of teachers were Black and 2 percent Hispanic, but 16 percent of students were Black and 8 percent Hispanic.

What is the effect of testing on this imbalance? In California, 76 percent of Whites passed the state test of basic skills, while only 39 percent of Hispanics and 26 percent of Blacks passed. In Texas, the passing rate on the Preprofessional Skills Test was 62 percent for Whites, 19 percent for Hispanics, and 10 percent for Blacks. In Georgia, 87 percent of Whites, but only 34 percent of Blacks, passed the Teacher Competency Test on the first try. In the 1982 administration of the Florida Teacher Competency Test, the results were similar: 83 percent of the Whites and 35 percent of the Blacks passed all four parts of the test. In Oklahoma, the passing rate was 79 percent for Whites, 58 percent for Hispanics, and 48 percent for Blacks (Goertz, 1984, pp. 23-24).

Following an extensive survey, Smith (1984) predicted that the minority teaching force will drop from 12 percent today to 5 percent in a decade. Tests already have contributed to a 47 percent drop since 1978 in the number of new teachers trained by mostly Black institutions (American Association of Colleges for Teacher Education, 1984, p. 361). In every state, however, the percentage of students passing these tests

has increased with subsequent administrations. Despite this positive trend for all students, the percentage of minorities remains low, and more important, the actual number of minority prospective teachers taking the tests continues to drop.

These dismal predictions are cause for concern among proponents of educational equity. We predict that the situation may be even worse than many scholars have foreseen: not only are minorities disadvantaged through entrance tests to the profession and state testing, but colleges and universities may be disadvantaging those who survive by using inappropriate entrance requirements for graduate study.

Advancement in the teaching profession in many states is dependent upon progress in the career ladder, and most career ladders are based on advanced graduate study. Graduate education programs frequently require entrance examinations that themselves discriminate against minority group members (Cooksey & Stenning, 1981; Duling, 1974). In short, those teachers who remain in the profession may continue on the lower rungs of the career ladder because of admissions policies in graduate schools. This study investigated the implications of entrance requirements for success in one graduate teacher education program.

Method

In this report, success was defined using the same criteria as employed by the university where the study was conducted. Students had to maintain a 3.0 (B) average, with no more than 12 semester hours of C or lower.

Entrance requirements were also defined as in the University. Students could not enter with less than a 2.6 (B-) grade point average over the last 60 semester credit hours. They also needed a score of at least 30 on the Miller Analogies Test or 800 on the Graduate Record Examination. Under some circumstances, students could enter conditionally if they did not meet these criteria.

Sample

All spring and summer 1985 graduates of the Master of Education (MEd) program at a large public urban university (N = 139) plus a comparable random sample (N = 106) of students currently enrolled in the program were the subjects of the study. These students were professionals from about 40 school districts. The initial random sampling produced a sample similar in ethnic proportions to the current graduate enrollment (N = 1,145) of the College (85 percent White and other U.S., 5 percent Black, 6 percent U.S. Hispanic, and 3 percent Foreign). Because of the disproportionately small percentage of minority teachers, we oversampled among minority current enrollees. The resulting sample is described in Table 1.

The need to oversample is particularly important given the setting of the graduate program being studied. According to the 1980 census, the population of the greater metropolitan area was over 3.5 million, with the following ethnic proportions: 72.2 percent White and other, 18.3 percent Black, and 14.5 percent Hispanic. In the major school district of the area, however, a very different picture emerged. Of the approximately 194,000 students at the time of the study, 43 percent were Black, 36 percent Hispanic, and 21 percent White and other. The teacher population of that district was approximately 48 percent Black, 47 percent White and other, and 5 percent Hispanic. In short, the ethnic minority population in the area was not represented in the graduate programs at the university, with Hispanic teachers severely under-represented in both the school district and at the university.

One of the most interesting differences in the sample is that one-third of them entered conditionally, yet conditional status was disproportionately high among the minority students. Twenty-five percent Whites compared to 50 percent minority students entered conditionally.

Variables

The variables studied include the gender of the teacher, the major department, ethnicity, incoming grade point average as described above, an entrance examination score (either GRE or MAT), the number of semester hours of C or less, and the current or graduating grade point average.

The dependent variables were the indicators of success: the current or graduating GPA and the number of hours of C. The selection of the independent variables was based on the use of the entrance examination and undergraduate GPA to determine admission status as well as the literature on background variables that influence those admission criteria.

The Graduate Record Examination has received considerable attention in the research literature. The publisher, particularly, has sponsored numerous studies regarding the appropriateness of the exam as an entrance criterion for minority students (for example, see Centra, 1980 and Wilson, 1979). The publisher, the Educational Testing Service (ETS), has noted in its publications that cutoff scores are not appropriate, particularly when sections of the test are summed to determine the cutoff. Nonetheless, the practice is apparently quite widespread (cf. Dejnozka & Smiley, 1983; Traynham, 1978) and continues at the university described in this study.

In one ETS study, Nieves (1976) urged departments to conduct local validity studies, particularly to determine the effects of GRE cutoff scores on minority students. The Ford Foundation's Commission on Higher Education of Minorities urged universities to adopt a system to avoid the exclusion of minority students (Middleton, 1982), but Dejnozka and Smiley (1983) reported that fewer than half of the education graduate schools they surveyed had adjusted admission criteria for minority teachers.

One institution conducted a study of the effects of the GRE in all colleges of the university and reported that the GRE was not significantly predictive of masters-level grades in four colleges, including Education (Cooksey & Stenning, 1981). They

also noted a strong sex bias in the GRE. Other problems reported with the GRE included an age bias (Hartle et al., 1983), a language bias (Kaiser, 1983), and a race bias (Scott & Shaw, 1985).

The Miller Analogies Test has been studied less. Duling (1974) found that, although the Mexican-American students in his sample scored significantly lower on the MAT than the White students, those scores did not influence performance in class at the graduate level. In fact, the MAT was not considered a valid predictive instrument for either group. Nonetheless, Dejnozka and Smiley (1983) found that about half of the education graduate programs that required standardized tests in their survey accepted the MAT in lieu of the GRE.

Statistical Analysis

This study sought to determine the effects of entrance criteria and background characteristics on graduate school success. For that reason, multiple regression analysis was the basic analytical procedure used, with two different models specified. First, the entrance criteria and background variables were regressed on the number of semester hours of C. Second, those same variables were regressed on the current or graduating GPA. Next, because of the influence of the background variables on the entrance criteria, a causal model was specified in which the background factors were exogenous variables, and the admission and success criteria were the endogenous variables.

Results

Table 2 reports the means, standard deviations, and correlations for all variables. Table 3 summarizes the results of the multiple regression analyses. As Table 3 shows, ethnicity (β = .30) was the best indicator of current GPA when GRE was included in the equation, followed by GRE (β = -.22). When the MAT was included in the equation, ethnicity (β = -.25) and the MAT (β = -.27) were both equivalent indicators of graduate GPA. The model with the MAT as the entrance examination explained 21 percent of

the variance ($p < .0001$), while the model with the GRE explained 27 percent of the variance ($p < .0001$).

These same variables failed to explain statistically significant amounts of the variance in the hours of C. Only 2 percent of the variance was accounted for with the MAT in the equation. The GRE equation waas slightly better, explaining about 10% of the variance. The only significant variable in both equations was incoming GPA when the GRE was in the equation. Because of the small amount of variance accounted for in this model, no further analyses were conducted using the hours of C.

Because of the possibility that some of the independent variables were measuring similar attributes, tolerance levels were calculated. These levels were surprisingly high, ranging between 78 percent and 98 percent and signifying very little multicollinearity. For example, the undergraduate GPA was not measuring the same factors as the GRE or MAT but something very different.

Since Ethnicity was a significant variable, Blacks and U.S. Hispanics were grouped into a single minority category. Table 4 includes the correlation coefficients, means, and standard deviations of the stratified sample. The same variables, with the exception of Ethnicity, were again regressed on graduate GPA using a stratified sample of Whites. Because of the small number of minorities, no further analyses could be conducted on that group. The results, summarized in Table V, demonstrate that the admission criteria are very good indicators of success for White males. The equation for Whites explained 41 percent of the variance, with three statistically significant variables: Gender, Undergraduate GPA, and GRE.

Ethnicity's role in success is clearer when both the direct and indirect effects are studied. In the GRE model, the Betas for ethnicity increased from -.3012 to -.5946 when the total effects were measured (see Figure 1 for the specific beta weights of the paths). In the MAT model, the Betas increased from -.2527 to -.5238 for total effects. Table 6 reports other interesting results when total effects are calculated.

Discussion

The findings of this study are consistent with those of other studies regarding the role of ethnicity in graduate school entrance examinations. Previous studies, however, have not documented the total effects of ethnicity, gender, and major department on graduate school success. In addition, because they want to predict success, many previous studies employ a stepwise multiple regression design. Setwise regression analysis was used in this study to determine the relative importance of variables found in the literature to be indicators of graduate school success.

The results demonstrate the weak associations between entrance requirements (such as undergraduate GPA and standardized examination cutoff scores) and indicators of success (such as graduate GPA and hours of C), particularly among minorities.

The R2s of the equations in which the number of Cs was the dependent variable were particularly low. Ninety to 98 percent of the variance of the number of Cs is attributable to other factors, none of which are usually considered when a student applies to graduate school.

One interesting factor in these equations is the lack of significance for Ethnicity when studying the number of Cs. While students report that certain professors give lower grades to ethnic minority students, overall, the pattern is not statistically significant in this sample. A review of the C list sent to the Dean of the College each semester, however, revealed a significantly larger population of ethnic minority students than would be expected given the small percentage of minority students in the College. This needs further investigation because the C list includes students who are not formally admitted to a graduate program as well as graduate students. If students are receiving lower grades because of their ethnicity, the courses where this is occurring should be noted and professors notified of the pattern. Action should be taken by College administrators, Graduate Studies Committee, or student advocate

groups rather than the practice being dismissed as the instructor's prerogative or the students' imagination.

On the other hand, if weak students are taking courses without being accepted into a graduate program, their lack of skills may affect the quality of graduate instruction. Leveling work could be required for acceptance into a graduate program or even to continue taking non-degree oriented courses.

The results of the equations with graduate GPA as the dependent variable are also cause for concern for teacher educators. Should advocates of educational equity propose the elimination of standardized tests? Our results indicate that those tests are significant indicators of graduate grade point average in this sample, which was predominantly White. The stratified models demonstrate that, when the sex of the student is controlled, undergraduate GPA and the entrance exam are significant indicators of graduate GPA among White students.

However, this study was conducted only on those students admitted to a masters program; a different picture might emerge in a university with open admissions. Perhaps those students who were denied admission because of low entrance exam scores would be as successful in graduate school as those who were admitted to a program with traditional standards. This contention is given further support by the overall percentage of variance accounted for in the models. The R2 average of the overall models, while statistically significant, was only about 25 percent. That is, the entrance criteria plus background variables accounted for about one-fourth of the variance of the current or graduating GPA. Clearly, other factors not in the equations are also important indicators of graduate school success.

Until those factors are identified, educators must contend with a very discriminatory picture: ethnic minority students receive lower undergraduate grades and lower scores on entrance examinations. These scores apparently affect their

admission to the program but are not the primary indicators of grades among those students admitted to the program.

This issue has been debated in the literature for several years. As the number of minority teachers decreases, and the public reform debate achieves consensus among teacher educators, the problem takes on new dimensions, particularly for Hispanic teacher educators. It may be that our concerns will resolve themselves. Those teachers who are test-conscious enough to pass the barriers to the profession may receive better scores on entrance exams as well. However, given the nature of the two types of tests, this is doubtful.

If our fears are realized, who will teach the increasing number of Spanish-speaking children? Will the multiple screens, such as testing for professional entrance and standards for admission to graduate study, preclude many from becoming teachers and others from progressing up the career ladder? Will such barriers screen out those persons committed to the education of minority children? Will minority teachers miss the opportunity to learn more advanced theories and practices because they are not admissible to graduate school? These issues need both research and political attention if hispano children are to receive appropriate educational programs.

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Table 1

Sample and Background Variable Descriptions

Total	N = 248
Current Students	N = 109. Masters students active spring, 1986.
Graduates	N = 139. 1985 spring and summer graduates from Masters program.
Ethnicity	As indicated by student on admissions form. Coded by presumed standard English language skills: White (N = 178) Coded 1. Black (N = 26) Coded 2. U.S. Mainland-born Hispanic (N = 26) Coded 3. Foreign from non-English-speaking country (N = 16) Coded 4.
Minority	A category composed of Blacks and U.S. Hispanics, each 50%.
Gender	Female (N = 202) Coded 1. Male (N = 45) Coded 2.
Department	Curriculum & Instruction (CUIN) contain all elementary and secondary programs, including content methods and bilingual education (N = 133); Coded 1. Educational Leadership & Cultural Studies (ELCS) consists of all administration programs and cultural foundations, including multicultural education (N = 27); Coded 2. Educational Psychology (EPSY) includes psychological foundations plus special education and counseling (N = 54); Coded 3. Health, Physical Education & Recreation (HPER) contains all physical education programs (N = 27); Coded 4. Occupational Education (OCED) consists of vocational programs and is housed in the College of Technology (N = 4); Coded 5.
Conditional	Status for students who entered with either low undergraduate GPA, low entrance exam scores, or both. Students must maintain a B average in first 12 hours (N = 79).

TABLE II

CORRELATION COEFFICIENTS

	ETH	GENDER	DEPT	GRE	MAT	UG GPA	GRAD GPA	NOCS	$\bar{X}$	SD
ETH		-0.036	-0.021	-0.221*	-0.422****	-0.167**	-0.335****	0.078		
GENDER			0.161**	0.033	0.083	-0.029	0.010	-0.016		
DEPT				-0.121	-0.094	-0.120	-0.130*	0.033		
GRE						0.283**	0.324***	-0.181	949.60	187.09
MAT						-0.036	0.377****	-0.060	45.91	14.55
UG GPA							0.189**	-0.171**	3.29	.38
GRAD GPA								-0.573****	3.53	.49
NOCS									.80	2.06

* $P < .05$
** $P < .01$
*** $P < .001$
**** $P < .0001$

Table 3

Regression Equations

Dependent variable: Graduate gpa					
R2 = .211****			R2 = .272****		
Variable	**T score**	**Beta**	**Variable**	**T score**	**Beta**
ethnicity	-2.858**	-.2527	ethnicity	-3.117	-.3012
gender	.479	.0380	gender	-.059	-.0055
department	-.003	-.0002	department	-1.840	-.1753
MAT	3.043	.2688	GRE	2.301*	.2204
gpa	1.346	.1061	gpa	1.106	.1118
Dependent variable: hours of C					
R2 = .024			R2 = .102		
Variable	**T score**	**Beta**	**Variable**	**T score**	**Beta**
ethnicity	.513	.0505	ethnicity	-.116	-.0124
gender	-.218	-.0193	gender	-.119	-.0124
department	-.350	-.0314	department	.668	-.0707
MAT	-.353	-.0347	GRE	-1.050	-.1117
gpa	-1.442	-.1265	gpa	-2.213*	-.2482

* p < .05
** p < .01
*** p < .001
**** p < .0001

TABLE 4a

CORRELATION COEFFICIENTS

WHITES ONLY

	DEPT	UGGPA	GRE	MAT	NOCS	GRADGPA	X	SD
GENDER	0.137	-0.039	0.144	0.094	-0.020	-0.093		
DEPT		-0.188**	-0.172	-0.253**	0.054	-0.181*		14.17
UGGPA			0.217	-0.125	-0.196***	0.248***	3.32	0.38
GRE					-0.234*	0.442***	987.53	179.79
MAT					0.061	0.254**	50.11	14.17
NOCS						-0.616****	0.62	1.90
GRADGPA							3.64	0.29

*	.05
**	.01
***	.001
****	.0001

TABLE 4b

CORRELATION COEFFICIENTS

MINORITIES ONLY

	DEPT	GRE	MAT	GPA	GRADGPA	NOCS	X	SD
GENDER	0.355**	0.200	-0.077	-0.068	0.117	0.012		
DEPT		-0.072	0.404*	0.037	-0.119	-0.116		
GRE				0.172	0.083	-0.015	750.00	124.56
MAT				0.011	0.170	-0.049	36.35	10.75
GPA					0.048	-0.049	3.20	.31
GRADGPA						-0.475***	3.21	.67
NOCS							1.44	2.41

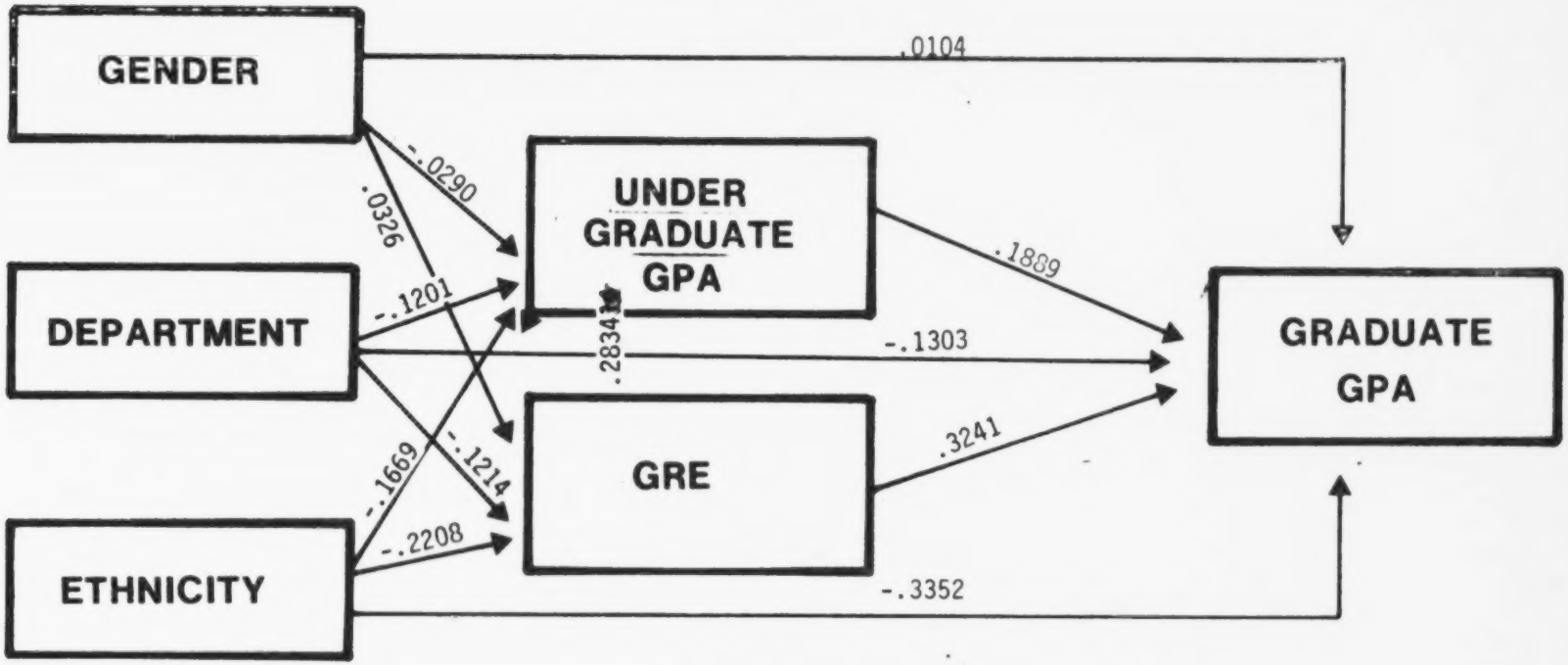
*	.05
**	.01
***	.001
****	.0001

Table 5

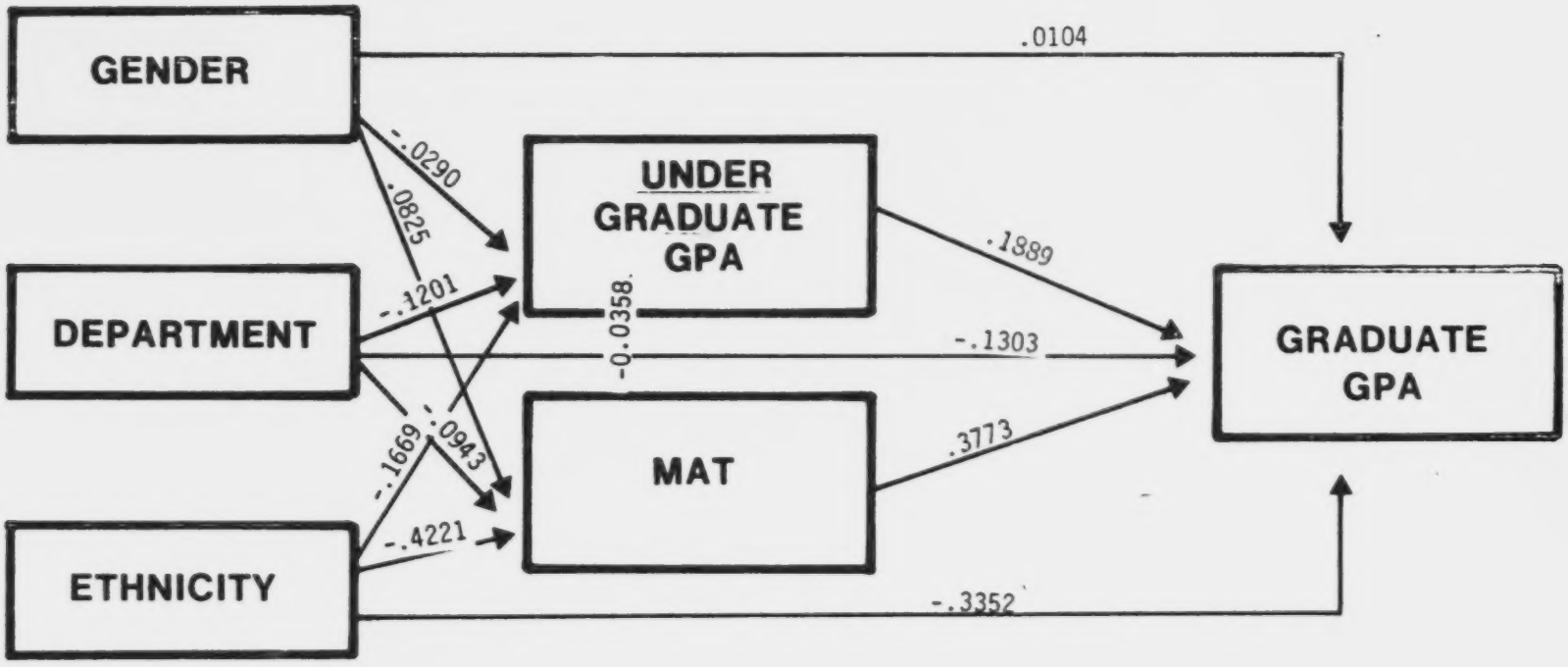
Regression Equations by White and Minority Group

Dependent variable: Graduate gpa			Sample: Whites		
R2 = .41****			R2 = .08		
Variable	**T score**	**Beta**	**Variable**	**T score**	**Beta**
gender	-2.129*	-.2042	gender	-.545	-.0557
department	-1.238	-.1203	department	.075	.0080
GRE	3.865***	.3783	MAT	2.610**	.2766
gpa	3.642***	.3528	gpa	1.196	.1225

FIGURE 1
PATH ANALYSIS
DIRECT EFFECTS



GRE MODEL


GENDER
DEPARTMENT
ETHNICITY
UNDER GRADUATE GPA
MAT
GRADUATE GPA
.0104
-.0290
.0825
-.1201
-0.0358
-.1303
.1889
-.1669
-.0943
-.4221
.3773
-.3352

MAT MODEL